ABSTRACT OF THE DISCLOSURE

A parameter representing whether an effective density pixel exists in an objective image is calculated. As to each interest pixel in the objective image having one pixel neighboring a downstream side in a first direction, the interest pixel is defined as an effective density pixel when a first condition and a second condition is an effective density pixel are satisfied, and in other case, the interest pixel is defined as an ineffective density pixel. The objective image is converted to an update image on one-line reduced lines in the first direction. A parameter representing whether an effective density pixel exists in the update image is calculated. The conversion and the calculation are repeated about the update image as the objective image. When the objective image converts one line in the first direction, the number of continuous pixels of the effective density pixels spatially continuing is calculated based on each parameter.